Castilleja linariifolia

Castilleja

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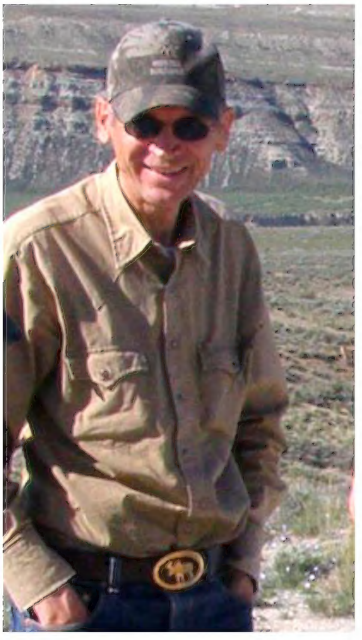
It's a Bird! It's a Plane! *It's -- Robert Dorn!*

This year, Wyoming Native Plant Society recognizes Robert ("Bob") Dorn as the third recipient of the Hartman Award, marking excellence in Wyoming botany. Others beat us to it: Montana Native Plant Society awarded him with a Special Achievement Award in 2008, and the Biodiversity Institute at University of Wyoming honored Robert Dorn, half of the legendary Robert & Jane Dorn team - with its inaugural "Contributions to Biodiversity Science Award" in 2013.

The Hartman Award was started in 2015, named after Ronald Hartman as first recipient, to recognize outstanding contributions to the mission of the Wyoming Native Plant Society in promoting appreciation, conservation and understanding of Wyoming native plants and vegetation. B.E. "Ernie" Nelson was second awardee. Hartman was curator at Rocky Mountain Herbarium and Nelson was colleague of Hartman and is current curator.

Robert Dorn is third Superhero of the Wyoming botanical community, whose state flora editions are research feats and foundation for understanding the flora and its diversity (Dorn 2001, 3rd ed.). They contain no less than 20 plant species and varieties new to science that he described. In further feats of indefatigability, he went on to publish "The genus *Salix* in North America North of Mexico" (Dorn 2010; electronic sequel to his doctoral dissertation in 1974) and "Flora of the Black Hills" (Dorn 2019; electronic sequel to his book by the same name in 1977, over 40 years earlier). One other of Bob's recent publications bundles information for gardening with natives for the general public (Dorn and Dorn 2007) ... and the *Castilleja* readership ever since 2011 (see the 32nd article in the series; this issue).



Left: Robert Dorn on WYNPS fieldtrip

Finally, Bob not only wrote the keys, monographs, and planting guides for the state flora – he also wrote the single largest set of plant species status reports produced in Wyoming for the U.S. Fish and Wildlife Service under the Endangered Species Act; setting the standard for ensuing technical reports and updates. We would be remiss if we didn't also recognize Bob's direct contributions to the Society's mission. By October 1981, Robert D. Dorn added his initials to the list of contributors in the Society newsletter. He was also the 1982 President, and the 1985 Treasurer, when he proposed a fund to support graduate student fieldwork. Then in 1986-1992, the Society newsletter took on a distinct green paper color, and Robert Dorn became contributor-in-chief (never editor), and has been its most frequent contributor ever since, to the benefit of every educational and communication objective ever held by the Society. (Cont. p. 10)

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WYNPS News

Annual Meeting REMINDER: We're gathering in the Atlantic City area from June 14 – 16. We've planned three days packed with an array of plant walks and hikes led by expert botanists. On Saturday, June 15 evening at the historic Miners Delight Inn in Atlantic City, we will have a potluck dinner and a presentation by renowned ethnobotanist John Mionczynski. Please send in the registration form (p. 5) or register online: www.wynps.org - by May 31. Please let us know if you plan to camp at Big Atlantic Gulch Campground so we can hold space for you. If you would like to stay at Miners Delight Inn, please contact owners Barbara and Bob Townsend directly at 307-714-0100.
…If you've already registered, thank you very much!

2019 Scholarship Announced: The 2019 winner of the Markow Scholarship is Alice Stears, in the Department of Botany, University of Wyoming. She is awarded $980 by Wyoming Native Plant Society for her dissertation work on Colorado butterfly plant population demography at its two largest populations,

WYNPS Board – 2019
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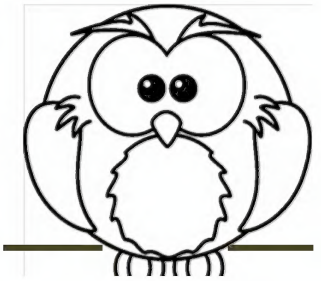
Teton Plants: Amy Taylor, Treasurer; (tetonplants@gmail.com). …Check the chapter homepage (https://tetonplants.org/) for an exciting slate of hikes!

New Members: Please welcome the following new members to WYNPS: S. Kelly Ambler, Denver, CO; Laurel Barrett, Pinedale; Alisha Bretzman, Sheridan; Magdalena Eshleman, Lander; Ann M. Grant, Fort Collins, CO; Valerie Jackson, Pinedale; Harry Loessberg, Denver; Emily Lucas and Aaron Bailey, Pinedale; Timbersong Healing Arts, Pinedale.

Message from the President



Spring Greetings!

Northwestern Wyoming exhibits signs that winter has begun to recede. Mud season is here and the earliest wildflowers are blooming. Soon the parade of green will initiate its march up hillsides, nourished by copious winter snowfall. And thoughts will turn to the lavish displays of native plants that Wyoming offers.

As your plans for summer wildflower outings take shape, I hope you'll include the annual meeting of the Wyoming Native Plant Society – see reminder (this page) and registration form (p. 5) or register online: www.wynps.org - by May 31.

Meanwhile be sure to search for the early wildflower specialties of your area. If you're wondering if smartphone/tablet apps would aid you in identifying what you discover, perhaps my review of the apps I use might be helpful— check out p. ??. You could tell me what you think of these apps when we gather at the annual meeting as I look forward to seeing you there!

Treasurer's Report: Balance as of 25 Apr 2019: Scholarship = $81; General = $7,634; Total = $7.715.

Contributors to this Issue: Robert Dorn, Katy Duffy, Bonnie Heidel, George Jones, Dorothy Tuthill.

Next Issue: Please send articles and announcements by 15 September to:

Wyoming Native Plant Society
P.O. Box 2449
Laramie, WY 82073

All Things Wetland Plants:

Two Wyoming Botanists Enter New Careers

By George Jones,
Wyoming Natural Diversity Database

When you think of scientists who understand the art of communicating through film, who comes to mind? Very likely, Carl Sagan and Neil DeGrasse Tyson It might seem that astrophysicists have an unusual capacity for standing with one foot in the world of science and the other in the world of art. But, if you log onto the home page of the National Wetland Plant List (http://wetland-plants.usace.army.mil/nwpl_static/v33/home/home.html), look on the right-hand side for "All Things Wetland Plants", and open the link to the "ATWP Video Series", you'll see that some botanists have what it takes.

The page that opens presents you with a list of 29 thoroughly watchable and information-packed videos about a wide range of topics: plant identification, families of wetland plants, plant DNA, floristic regions, dichotomous keys, herbaria, floristic quality index, and lots more. Nearly every one of them features Robert Lichvar, a name known to many *Castilleja* readers. Bob started his botanical career in Wyoming, earning a master's degree in botany at University of Wyoming studying the flora of the Gros Ventre Mountains, and working as the first botanist for the Wyoming Natural Heritage Program (which became the Wyoming Natural Diversity Database). He left Wyoming for a long career as a research botanist with the U.S. Army Corps of Engineers and became a leading light in the Corps' wetlands program.

If you're methodical, your instinct will be to start with the first two videos, "Series Overview" and "Introduction". But don't. Instead, go to number 10, "Identifying Willows", to see the second Wyoming botanist who clearly has a future on screen. It is, of course, Bob Dorn. For 17 minutes you'll watch two natural actors teach about a group of plants that you might have thought you knew well. No props, no special effects, and they make it look easy.

These videos are a wonderful addition to the remarkable body of information that the Army Corps of Engineers provides to the public. Most are 10 minutes to 30 minutes long, a few are shorter, and two run longer than an hour. Set aside time to watch them. They provide you with a unique opportunity to learn about a range of botanical subjects from an equally wide range of learned botanists.

Here are just some of the video selections in the "All Things Wetland Plants" (ATWP) Video Series:

- Introduction to Plant Identification
- Overview of Video Series
- Identifying Common Wetland Flowering Plant Families
- Identifying Common Rushes
- Identifying Common Sedges
- Carex (Sedge) Identification with A. Reznicek
- Floristic Regions: Discussion with Leila Shultz
- Identifying Common Grasses
- Overview of Grasses
- Tour of the U.S. National Herbarium, Smithsonian Institution
- Key Features for Identifying Willows
- Major Features for Keying Common Wetland Ferns
- Plant Sampling for DNA
- Concept of a Genus: Discussion with William Weber
- A Lifetime of Botany: Discussion with William Weber
- A Discussion of Herbaria: Discussion with William Weber

What's App?

Overview of several plant apps for our area

By Katy Duffy

Smartphones and tablets practically invite installation of apps! The availability of several plant apps means it's no longer necessary to carry heavy field guides except when keying of plants is part of the excursion.

What all of the apps listed here have in common:

- Information is stored in the app, so apps are large but access to a cell phone signal or the internet is not required.
- They are available on the App store and Google play.
- Instructions on how to use the app are included.
- The search function allows use of various plant characteristics (e.g., color of flowers, number of petals), also habitat, elevation and flowering time to narrow down possibilities.
- Common and scientific names are given, also the family to which each species belongs.
- A few excellent photos are provided for each species.
- The range map for each plant species shows counties in each state where the species occurs.
- The apps cover various plant types: wildflowers, shrubs, trees, grasses, ferns.

High Country Apps (www.highcountryapps.com) offers these and several other plant apps for purchase: Flora of the Yellowstone Region ($7.99) was developed by Whitney Tilt. It uses photos and line drawings to illustrate 441 species. For each species, there's a description that includes field marks, habitat and flowering time. The tidbits section for each species contains interesting details including human uses. The Botanical Help section offers descriptions of plant families included in the app and the number of species of each family in the app, also flower and plant basics, including a glossary. For those who prefer printed field guides, Flora of the Yellowstone by Whitney Tilt was published in 2015.

Colorado Rocky Mountain Wildflowers ($9.99 with a portion of proceeds donated to the Colorado Native Plant Society) was developed by Al Schneider. The app covers the Colorado Rocky Mountains from the foothills to the alpine zone. The format is similar to Flora of the Yellowstone Region and uses outstanding photos and line drawings to illustrate 520 species.

Montana Grasses- ($4.99, with a portion of proceeds donated to Montana Native Plant Society) was developed by Montana State University and includes 210 graminoids.

The following free apps, all with the same format, were developed by Steve Sullivan with other contributors:

www.wyomingwildflowers.com – 2512 species (1549 wildflowers, 155 shrubs, 70 trees, 11 vines, 62 aquatic plants, 366 grass-like, 46 fern-like, 134 moss-like, 222 lichen).

www.yellowstonewildflowers.com – 2326 species (1384 wildflowers, 141 shrubs, 60 trees, 11 vines, 73 aquatic plants, 343 grass-like, 47 fern-like, 136 moss-like, 244 lichen).

www.montanawildflowers.com – 2781 species (1633 wildflowers, 171 shrubs, 80 trees, 16 vines, 87 aquatic plants, 393 grass-like, 72 fern-like, 196 moss-like, 276 lichen).

Each of these free apps states whether a plant is native or non-native, botanical terms used in the description are explained and there are links to plant descriptions and photos. Lists of plants observed can be recorded and logged on https://plantlists.org/ a website created by Steve Sullivan. Plant data is then incorporated into the wildflower search website https://wildflowersearch.org/ also created by Steve Sullivan. Plant identification can also be determined using the wildflower search site.

Using any of these apps can be a lot of fun because they can aid identification and remove the frustration of finding mystery plants. But keep in mind what the About This App section of each of the free apps described above clearly states: "while this App will help you make tentative identifications quickly, it can't replace the skill and training of a professional botanist."

COME WITH YOUR APPS AND BOOKS!

South Pass City Historic Site hikes lead by Jack & Diantha States at the upcoming annual meeting will build a checklist! Copies of their "Wildflowers of Wyoming" and of Dorn (2001) will be for sale at registration.

Oregon Buttes Wilderness Study Area – here we come!

By Bonnie Heidel
Wyoming Natural Diversity Database

Oregon Buttes is topographic punctuation along the Oregon Trail, and a landmark to all who passed before and after. It was originally called Table Rock at the time that the Oregon Trail was heavily travelled. This is where the Continental Divide splits into two divides after veering from the Wind River Range out onto high desert. Its position along the Continental Divide marked the start of Oregon Territory (or just "Oregon", for short, as noted by early travelers).

Oregon Buttes is now a Bureau of Land Management (BLM) Wilderness Study Area with plant life that is a showcase for the Wyoming Basins Ecoregion, all the richer for its montane and wetland flora elements. We will explore that flora during peak flowering and, if we have the good fortune of clear skies, may also witness the same panorama described 170 years ago. On July 3, 1849, the following journal entry by Joseph Warren Wood described the landscape as he detoured from South Pass on horseback:

> "*We are now in Oregon*," wrote Wood. "*At noon I started in company with Allan for the Table Rock on the south side of the pass. We passed over 4 or 5 miles of arid plain when we came to a steep high bluff with snow on one side, a small cool stream of water ran from it, through a grove of poplar. The birds were singing in the branches, the grass was green & it was a beautiful spot to spend a little time. ... We climbed the snow bank & hill with considerable difficulty—went down into another valley & in 4 or 5 miles came to the foot of the rock. It was higher than I had anticipated finding it & after an hour's severe toil we found ourselves upon the top. It was clad with pines & the ground was covered with cones. The area of the top would amount to several acres. It was connected by an isthmus with another still higher elevation on the south. ... The views from it was grand & imposing. It seemed as though we could see 200 miles in almost any direction, on the W & S & North the view was bounded by Mountains, on the east by distance* (Wood 1849)." [1]

...Be prepared for strenuous hiking – the only other requirement is clean hiking boots. This is one of those special areas where non-native plant species are almost absent.

[A hike to Oregon Buttes is one of seven outstanding hike opportunities at the 2019 annual meeting. Two of the hikes feature species discovered and described by Robert Dorn: Desert yellowhead and Barneby's clover!]

REGISTRATION

This event is open to the public; membership in the Society is not required. However, registration is required. Please register by May 31, 2019. No dogs, please, on any of the hikes.

Name(s)_____

Address_____

How many people are you registering for? _____

Registration fee is $10/person. Payment enclosed: _____

Which days do you plan to attend? Please circle.

Friday Saturday Sunday

Hike registration

Saturday
_____Oregon Buttes
_____Desert yellowhead
_____Shoshone NF (am)
_____South Pass (pm)
Sunday
_____Clovers of the Canyon (am)
_____South Pass (am)
_____Sinks Canyon (all day)

Reservations at Miners Delight Inn must be made in advance. The cabins range from $120-140/night, rooms at the inn range from $140-$160/night.

Please return this by mail to WYNPS for receipt by 31 May, or register online at www.wynps.org

_____Do you plan to camp at the Big Atlantic Gulch Campground? Which nights? Friday Saturday Sunday

[1] Wood, Joseph Warren. Diary, 1849. HM 318, Huntington Library. Richard L. Rieck transcription.

Growing Native Plants

Part 32. Forbs for Moist Sites

By Robert Dorn

The following plants require a site that is mostly continuously moist but not excessively wet except occasionally. Locations along a stream or lake that are a foot or slightly more above the water level are typical. Dryer sites that are regularly irrigated would also be suitable.

Eustoma grandiflorum, Prairie Gentian, is an annual to short-lived perennial usually less than 1 foot high and 6 inches wide with one to several stems. The leaves are opposite and to 3 inches long and 2 inches wide. The flowers are in clusters of 2 to 6 near the tip of the stem, usually blue-purple or pink, and to 2 inches across. They appear from July to September. Cut the old flowers to prolong blooming. The plants occur naturally in moist meadows and moist prairies on the plains. They prefer full sun and moist, clayey or silty soils. They can be grown from seed that is surface sown. It is also in the nursery trade.

Eustoma grandiflorum, Platte County

Geranium richardsonii, White Cranesbill, is a perennial to about 2 feet tall and wide. The leaves are upto 5 inches long and wide and deeply lobed. The flowers are white, sometimes with a purplish tinge, and upto 1.75 inches across. They appear from June to August with a long flowering period. The plants occur naturally in moist, shady places in the mountains. They prefer moist, shaded or partly shaded sites. They can be grown from seed sown less than 0.5 inch deep immediately after collection. Germination may be poor. They can also be grown from rootstock divisions.

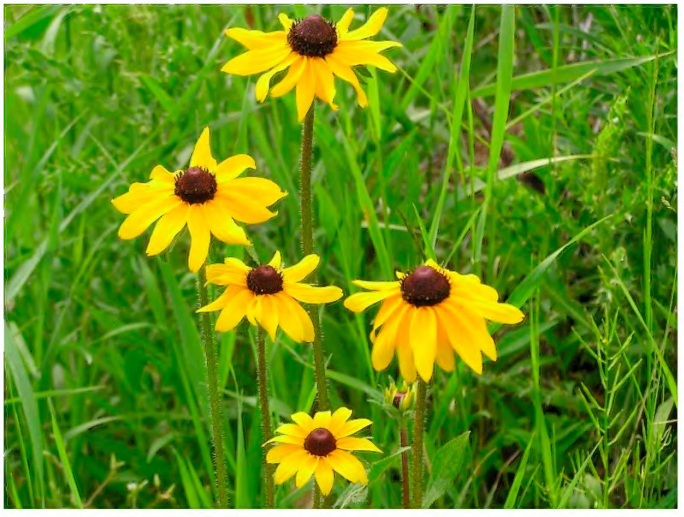
Geranium richardsonii, Carbon County

Iris missouriensis, Western Iris, is a rhizomatous perennial to 2 feet tall and forms large clumps or colonies. The leaves are mostly basal, narrowly strap-like, and to 8 inches long. The flowers are light blue to deep lavender marked with white or yellow with purple nerves. They are the typical Iris flower to 3 inches long with 1 to 3 at the tip of the stem. They appear from May to July. The plants occur naturally in moist to wet meadows in the plains, basins, valleys, and mountains. Their habitat often becomes dry in late summer. They prefer full sun and moist loamy or clayey soils and are somewhat drought tolerant once well established. They can become aggressive under ideal conditions. They are mildly poisonous. They can be grown from seed sown outdoors in the fall or cold stratify for 60 to 120 days for spring sowing. Surface sow for light exposure. Keep moist. It may take several years for flowers to appear. They can also be grown from rhizome cuttings that have at least one good bud. It is also in the nursery trade.

Rudbeckia hirta, Blackeyed Susan, is a biennial or short-lived perennial with one to several stems to 3 feet tall and 2 feet wide. The leaves are to 8 inches long and less than half as wide. The ray flowers are yellow to orange-yellow

and the disk flowers dark brown to purplish-black. The flower heads are solitary at the stem tips, to 3 inches across, and appear from June to September. The plants occur naturally in meadows and other moist open places in the plains and foothills. They prefer full sun and moist, well-drained soils. They will tolerate some drying of the soil. They can be grown from seed surface sown as soon as ripe. Stored seed should be cold stratified for 30 days before planting. They bloom the second year after seeding and they self seed readily. They are easy to transplant and are in the nursery trade.

Iris missouriensis, Albany County



Rudbeckia hirta, Lawrence County, SD

Solidago gigantea Late Goldenrod, is a rhizomatous perennial to 2.5 feet tall forming large colonies. The leaves are 2 to 3 times as long as wide and toothed. The flower heads are small, less than 0.5 inch tall and wide, but are densely clustered in a broad inflorescence. The flowers are yellow and appear from July to October. The plants occur naturally in moist open areas from the lower mountains to the plains, basins, and valleys. They prefer full sun and moist soils. They can be grown from seed surface sown outdoors in the fall. Don't expect high germination. It can also be grown from rhizome cuttings.

Solidago gigantea, Goshen County

To see the above plants in color, go to the newsletter on the Society website.

LARAMIE HIKE ANNOUNCEMENT

Please join the Biodiversity Institute, Rocky Mountain Herbarium and UW Extension on May 19 for a plant walk and workshop focused on "Learning Plant Families." The walk is scheduled from 10:00 AM to 12:00 PM – park on Crow Ave. It is free to attend.

The workshop is scheduled from 1:30 PM to 4:30 PM that afternoon and includes a $15.00 materials fee. Participants will have the opportunity to learn several major plant families by their flowers. Please sign up for the plant walk and/or the workshop at the following web link: tiny.cc/PlantFamily

Continued from p. 1

References

Dorn, R. D. 2001. Vascular Plants of Wyoming, third edition. Mountain West Publishing, Cheyenne, WY.

Dorn, R.D. and J.L. Dorn. 2007. Growing Native Plants of the Rocky Mountain Area. 252 pp. Paperback or CD. Lulu Press. http://www.lulu.com/.

Dorn, R. D. 2010. The genus *Salix* in North America North of Mexico. 59 pp. http://www.lulu.com/ .

Dorn, R. D. 2017, Flora of the Black Hills - Keys to Genera, Species, Subspecies, and Varieties. March 2019 update. Available online thru Rocky Mountain Herbarium www.uwyo.edu/botany/rocky-mountain-herbarium/

Wyoming Native Plant Society is a non-profit organization established in 1981 to encourage the appreciation and conservation of the native plants and plant communities of Wyoming. The Society promotes education and research through its newsletter, field trips, annual student scholarship and small grants awards. Membership is open to individuals, families, or organizations. To join or renew, please return this form to:

Wyoming Native Plant Society
P.O. Box 2449
Laramie, WY 82073

Name: _____

Address: _____

_____

Email : _____

Check one: [ ] New member [ ] Renewing member

[ ] Renewing members, check here if this is an address change.

[ ] Check here if you prefer to receive the newsletter electronically

Membership

[ ] WYNPS annual membership: $10.00

[ ] WYNPS annual membership + scholarship support: $20.00 ($10.00 for membership and $10.00 for Scholarship fund)

[ ] WYNPS Lifetime membership: $300 ($150 for membership and $150 for Scholarship fund)

[ ] Sublette Chapter annual membership: $5.00

[ ] Teton Chapter annual membership: $5.00

Total enclosed: _____ THANK YOU!

Wyoming Native Plant Society
P.O. Box 2449
Laramie, WY 82073